

In the Claims

Please cancel claims 1 - 5 and add the following new claims.

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- - 6. An individual drawer for use in a unit dose dispensing drawer, comprising:
a slider;
a tray carried by said slider;
an insert approximately the length of said tray, said insert carried by said tray and defining the volume of the individual drawer;
a lockable lid carried by said insert; and
a release mechanism for connecting said insert to said tray.
7. The drawer of claim 6 wherein said insert is divided into a plurality of compartments, and wherein said lid comprises a plurality of individual lids, each individual lid for covering one of said plurality of compartments.
8. The drawer of claim 7 wherein said individual lids are hinged along a side of said insert.
9. The drawer of claim 6 wherein said lid is one of mechanically lockable and adhesively sealable.
10. The drawer of claim 6 wherein said tray has an opening therein and wherein said insert has a corresponding opening, said release mechanism comprising a pin inserted through said opening in said tray and said opening in said insert and having a locked position, a spring urging said pin out of said locked position, and a button for acting upon said pin.
11. A combination, comprising:
a slider;
a tray drivable between an open position and a closed position with respect to said slider;
an insert carried by said tray, said insert defining individual compartments each having a lockable lid, said insert approximately the length of said tray and defining the volume of an individual drawer;
a release mechanism for connecting said insert to said tray;
a self-locking worm gear;
a driven gear;
a clutch for transferring motion of said worm gear to said driven gear; and
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a device connecting said tray to said driven gear such that rotary motion of said driven gear produces linear motion of said tray.

12. The combination of claim 11 wherein said lids are one of mechanically lockable and adhesively sealable.

13. The combination of claim 11 wherein said lids are hinged along a side of said insert.

14. The combination of claim 11 wherein said tray has an opening therein and wherein said insert has a corresponding opening, said release mechanism comprising a pin inserted through said opening in said tray and said opening in said insert and having a locked position, a spring urging said pin out of said locked position, and a button for acting upon said pin.

15. The combination of claim 11 additionally comprising a gear driven by said worm gear, and wherein said clutch includes a clutch rod and a movable gear driven by said gear, said clutch rod carrying a clutch fork for moving said movable gear into and out of engagement with said driven gear.

16. The combination of claim 15 additionally comprising a spring for biasing said movable gear into engagement with said driven gear.

17. The combination of claim 11 wherein said device connecting said tray to said driven gear includes a chain.

18. A dispensing cabinet, comprising:

a cabinet carrying a plurality of drawers, at least one of said drawers being a unit-dose dispensing drawer capable of dispensing a unit-dose, said unit dose dispensing drawer comprised of a plurality of individual drawers, each individual drawer comprising:

a tray drivable between an open position and a closed position with respect to said cabinet;

an insert carried by said tray, said insert defining individual compartments each having a lockable lid, said insert approximately the length of said tray and defining the volume of the individual drawer;

a release for connecting said insert to said tray;

a motor responsive to instructions from a computer;

a self-locking worm gear responsive to said motor;

a driven gear;
a clutch positioned between said worm gear and said driven gear; and
a device connecting said tray to said driven gear such that rotary motion of said driven gear produces linear motion of said tray.

19. The cabinet of claim 18 wherein each of said lids is one of mechanically lockable and adhesively sealable.

20. The cabinet of claim 18 wherein each of said lids is hinged along a side of said insert.

21. The cabinet of claim 18 wherein each of said trays has an opening therein and wherein each of said inserts has a corresponding opening, each of said release mechanisms comprising a pin inserted through said opening in said tray and said opening in said insert and having a locked position, a spring urging said pin out of said locked position, and a button for acting upon said pin.

22. The cabinet of claim 18 wherein each of said individual drawers additionally comprises a gear driven by said worm gear, and wherein each of said clutches includes a movable gear driven by said gear and includes a clutch fork, said cabinet additionally comprising a clutch rod carrying said clutch forks for moving said movable gears into and out of engagement with their respective driven gears.

23. The cabinet of claim 22 additionally comprising a plurality springs each for biasing one of said movable gears into engagement with its respectively driven gear.

24. The cabinet of claim 22 additionally comprising an override bar, said clutch rod being responsive to said override bar.

25. The cabinet of claim 18 wherein each of said devices connecting said tray to said driven gear includes a chain.

26. The cabinet of claim 18 wherein said unit dose dispensing drawer carries two rows of six individual drawers.

27. The cabinet of claim 18 wherein said unit dose dispensing drawer carries two rows of three individual drawers.

28. The cabinet of claim 18 additionally comprising a computer programmed to:
receive information identifying a user, a patient, an item and a quantity to be dispensed;

identify the individual drawer within said unit dose dispensing drawer containing the item to be dispensed; and

calculating the amount of travel of said tray within said identified drawer needed to expose the number of compartments necessary to enable said quantity to be dispensed.

29. The cabinet of claim 28 wherein said computer is programmed to produce signals for energizing each of said motors.

30. The cabinet of claim 29 wherein said signals include eight bits representing the amount of travel of said tray, four bits representing an individual drawer select signal, and a bit representing a direction.

31. The cabinet of claim 28 wherein each of said individual drawers additionally comprises a sensor, said computer responsive to said sensors.

32. A dispensing cabinet, comprising:

a motor control circuit responsive to a computer, said motor control circuit comprising a speed control circuit, a current control circuit and an interface circuit; and

a cabinet carrying a plurality of drawers, at least one of said drawers being a unit-dose dispensing drawer capable of dispensing a unit-dose, said unit dose dispensing drawer comprised of a plurality of individual drawers, each individual drawer comprising:

a tray drivable between an open position and a closed position with respect to said cabinet;

an insert carried by said tray, said insert defining individual compartments each having a lockable lid, said insert approximately the length of said tray and defining the volume of the individual drawer;

a release for connecting said insert to said tray;

a motor responsive to said interface circuit;

a self-locking worm gear responsive to said motor;

a driven gear;

a clutch positioned between said worm gear and said driven gear; and

a device connecting said tray to said driven gear such that rotary motion of said driven gear produces linear motion of said tray.

33. The cabinet of claim 32 wherein said motor control circuit is responsive to an overcurrent condition.

34. The cabinet of claim 32 additionally comprising motor sensors, and wherein said control circuit is responsive to said motor sensors to drive said motors at a first speed for a certain distance and at a second, lower speed until the individual drawer is opened to a desired distance.

35. The cabinet of claim 32 wherein each of said lids is one of mechanically lockable and adhesively sealable.

36. The cabinet of claim 32 wherein each of said lids is hinged along a side of said insert.

37. The cabinet of claim 32 wherein each of said trays has an opening therein and wherein each of said inserts has a corresponding opening, each of said release mechanisms comprising a pin inserted through said opening in said tray and said opening in said insert and having a locked position, a spring urging said pin out of said locked position, and a button for acting upon said pin.

38. The cabinet of claim 32 wherein each of said individual drawers additionally comprises a gear driven by said worm gear, and wherein each of said clutches includes a movable gear driven by said gear and includes a clutch fork, said cabinet additionally comprising a clutch rod carrying said clutch forks for moving said movable gears into and out of engagement with their respective driven gears.

39. The cabinet of claim 38 additionally comprising a plurality springs each for biasing one of said movable gears into engagement with its respectively driven gear.

40. The cabinet of claim 38 additionally comprising an override bar, said clutch rod being responsive to said override bar.

41. The cabinet of claim 32 wherein each of said devices connecting said tray to said driven gear includes a chain.

42. The cabinet of claim 32 wherein said unit dose dispensing drawer carries two rows of six individual drawers.

43. The cabinet of claim 32 wherein said unit dose dispensing drawer carries two rows of three individual drawers.

44. The cabinet of claim 32 additionally comprising a computer programmed to: receive information identifying a user, a patient, an item and a quantity to be dispensed;

identify the individual drawer within said unit dose dispensing drawer containing the item to be dispensed; and

calculating the amount of travel of said tray within said identified drawer needed to expose the number of compartments necessary to enable said quantity to be dispensed.

45. The cabinet of claim 44 wherein said computer is programmed to produce signals for energizing each of said motors.

46. The cabinet of claim 45 wherein said signals include eight bits representing the amount of travel of said tray, four bits representing an individual drawer select signal, and a bit representing a direction.

47. The cabinet of claim 44 wherein each of said individual drawers additionally comprises a sensor, said computer responsive to said sensors.

48. A method of restocking an individual drawer of a unit dose dispensing drawer, comprising:

releasing a first insert that defines the volume of an individual drawer from a tray;
connecting a filled insert to the tray from which the first insert has been removed; and
unlocking the lid of the filled insert.

49. The method of claim 48 additionally comprising:

delivering the first insert to a location for filling;
filling the first insert and locking the lid thereof; and
delivering the filled first insert to a medication dispensing cabinet.

50. The method of claim 48 wherein said unlocking comprises one of a mechanical unlocking and unsealing.

51. The method of claim 48 additionally comprising driving the drawer to a fully open position to enable access to a release mechanism.

52. A method of restocking a unit dose drawer comprising:

filling a first insert at a centralized storage location with items to be dispensed, said insert having a plurality of compartments each having a lid;
sealing the plurality of lids;
delivering said first insert to a decentralized location;
opening an individual drawer of a unit dose dispensing drawer to its fully open position;
removing an insert from said individual drawer; and